Claims

1. A multi-port network communication device including:

5   a plurality of ports for the reception and transmission of addressed data packets which include media access control address data;

a forwarding mechanism for directing packets received at any of said plurality of ports to at least one of the plurality of ports;

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a memory for the selectively controllable storage of permitted media access control addresses; and

means for restricting forwarding of packets from the device in response to an examination

15   of media access control data in said packets and said permitted media access control addresses;

wherein said means for restricting prevents the forwarding of a unicast packet having a source address and a destination address when neither of those addresses in the unicast

20   packet corresponds to a permitted media access control address, said device including means for comparing both the source address and the destination address of said unicast packet with said permitted media access control addresses.

2. A device according to claim 1 wherein said means for restricting prevents the

25   forwarding of multicast and/or broadcast packets to ports which are not connected to devices having permitted media access control addresses,

said device being operative to provide a list of ports which are connected to devices having permitted media access control addresses and said forwarding mechanism

30   including a port mask generator for producing a port mask that identifies a port which is

both a port to which a packet may be forwarded according to media access control data in the packet and a port in said list.

3. A multi-port network switch including:

a plurality of ports for the reception and transmission of addressed data packets which include media access control source and destination address data;

a forwarding database relating media access control addresses to said ports;

a forwarding mechanism for directing, in response to media access control destination address data in a received packet and in cooperation with said forwarding database, said received packet to at least one of the plurality of ports;

a memory for the selectively controllable storage of permitted media access control addresses; and

means for restricting forwarding of packets from the device in response to an examination of media access control data in said packets and said permitted media access control addresses;

wherein said means for restricting prevents the forwarding of said received packet when said packet is a received unicast packet having a source address and a destination address when neither of those addresses in the received unicast packet corresponds to a permitted media access control address, said device including means for comparing both the source address and the destination address of said received unicast packet with said permitted media access control addresses.

4. A switch according to claim 3 wherein said means for restricting prevents the forwarding of multicast and/or broadcast packets to ports which are not connected to devices having permitted media access control addresses,

said switch including:

a cache containing a list of ports which are connected to devices having permitted media access control addresses; and

a port mask generator for producing a port mask that identifies a port which is both a port to which a packet may be forwarded according to media access control data in the packet and a port in said list.